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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN MILLER, MARTIN DIECK, MARIA ABOYTES
and RYAN K. PIERCE

Appeal 2009-001148
Application 10/692,424
Technology Center 3700

Decided: [1]May 28, 2009

Before: WILLIAM F. PATE III, JENNIFER D. BAHR
and STEVEN D.A. McCARTHY, *Administrative Patent Judges*.

McCARTHY, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304 (2008), begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or the Notification Date (electronic delivery).

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134 (2002) from the final rejection of claims 1, 2, 6 and 7 under 35 U.S.C. § 103(a) (2002) as being unpatentable over Steen (US 6,213,995 B1, issued Apr. 10, 2001) and Mische (US 5,052,105, issued Oct. 1, 1991); and the final rejection of claims 1-9 under § 103(a) as being unpatentable over Samson (US 6,186,978 B1, issued Feb. 13, 2001) and Mische. We have jurisdiction under 35 U.S.C § 6(b) (2002).

Claim 1 is the sole independent claim on appeal:

> 1. A catheter comprising:
> a catheter body comprising at least one polymeric tubular member; and
> a braided tubular structure comprising a plurality of component tubular members each having longitudinal lumens, woven radially in and out to form said braided tubular structure, wherein said braided tubular structure is embedded in a wall of the polymeric tubular member.

We sustain the rejection of claims 1, 2, 6 and 7 under § 103(a) as being unpatentable over Steen and Mische. We do not sustain the rejection of claims 1-9 under § 103(a) as being unpatentable over Samson and Mische.

ISSUES

The Appellants argue claims 1, 2, 6 and 7 as a group for purposes of the rejection of the claims as unpatentable over Steen and Mische. (App. Br. 10-14). The Examiner finds that Steen discloses a catheter body including a

braided tubular structure provided with wires for transmission of signals. (Ans. 3). The Examiner reasons that it would have been obvious "to modify the braided tubular structure in Steen by substituting hollow tubular members for the conductive wires as suggested by Mische . . . ." (*Id.*) The Appellants contend that the Examiner mischaracterizes and overstates the teachings of Mische. (App. Br. 11). In the Appellants' view, Steen and Mische not only fail to suggest the subject matter of claim 1 but Mische actually teaches away from that subject matter. (App. Br. 13-14).

The Examiner finds that Samson discloses a catheter body including a braided tubular structure provided with metal wire elements capable of conducting electricity. (Ans. 4 and 9). The Examiner reasons that it would have been obvious "to modify the braided tubular structure in Steen by substituting hollow tubular members for the solid wires as suggested by Mische . . . ." (Ans. 4). The Appellants contend that the Examiner has failed to articulate reasoning sufficient to support the conclusion that the proposed substitution would have been obvious. The Appellants also contend that Mische teaches away from the claimed subject matter. (App. Br. 18).

Therefore, this appeal turns on two issues:

> Have the Appellants shown that the Examiner failed to articulate reasoning with some rational underpinning sufficient to support the conclusion that Steen and Mische would have suggested a catheter including a braided tubular structure comprising a plurality of tubular members woven radially in and out to form the braided tubular structure?

Have the Appellants shown that the Examiner failed to articulate reasoning with some rational underpinning sufficient to support the conclusion that Samson and Mische would have suggested a catheter including a braided tubular structure comprising a plurality of tubular members woven radially in and out to form the braided tubular structure?

FINDINGS OF FACT

The record supports the following findings of fact ("FF") by a preponderance of the evidence.

1. Steen discloses a polymeric tubing including a wall defining a lumen. (Steen, col. 3, ll. 14-17 and 43-45).

2. Steen discloses providing a plurality of braid elements forming a braid within the wall of the tubing. (Steen, col. 3, ll. 19-20).

3. Steen's braid elements include signal transmitting elements and structural elements. (Steen, col. 3, ll. 20-23). The signal transmitting elements may be used as sensor conductors. (Steen, col. 2, ll. 32-34).

4. Half of Steen's braid elements run helically parallel to each other. Another half of Steen's braid elements run in an opposite direction helically parallel to each other. The two halves of Steen's braid elements criss-cross each other so that the braid elements are woven together. (Steen, col. 3, ll. 23-28). In other words, Steen's signal transmitting elements are woven radially in and out with the structural elements to form the braid.

5. Mische discloses a micro-cable interconnect which may be used to connect to a connector of a sensor located at a distal end of a catheter. (Mische, col. 2, ll. 59-62).

6. Mische's micro-cable interconnect is adapted for insertion within the lumen of the catheter. (Mische, col. 2, l. 67 – col. 3, l. 2).

7. Mische's micro-cable interconnect includes an insulative flexible synthetic resin coating containing precisely spaced parallel electrical or optical conductors. (Mische, col. 2, ll. 37-40 and 3, ll. 40-41).

8. Mische discloses that, "the conductors *14*, instead of being electrical or optical conductors as just described, may be micro-tubes *19*." (Mische, col. 3, ll. 15-21). In such an embodiment, "the micro-cable interconnect would provide operative connection for transmission of pressure control to in-body sensors, for injecting bio-compatible fluids, or for sensing in-body pressure conditions." (*Id.*)

9. Samson discloses a catheter assembly having an open lumen along its entire length and an annular lumen which forms a closed system with a balloon or membrane. (Samson, col. 6, ll. 50-54 and 60-62).

10. Both an inner tube assembly and an outer tube assembly of Samson's catheter assembly include braid confined annularly between interior and exterior coverings. (Samson, col. 7, ll. 41-47 and Figs. 3-4).

11. Samson does not disclose conducting any signals through any strand of the braid.

PRINCIPLES OF LAW

A claim under examination is given its broadest reasonable interpretation consistent with the underlying specification. *In re American Acad. of Science Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). In the absence of an express definition of a claim term in the specification, the claim term is given its broadest reasonable meaning in its ordinary usage as

the term would be understood by one of ordinary skill in the art. *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007); *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Limitations not explicit or inherent in the language of a claim cannot be imported from the specification. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003).

A claim is unpatentable for obviousness under 35 U.S.C. § 103(a) if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set out factors to be considered in determining whether claimed subject matter would have been obvious:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined.

Id., 383 U.S. at 17.

The Appellants do not rely on any objective evidence of patentability in this appeal. (*See* App. Br. 22). Therefore, the Appellants' burden in this appeal is to show that the Examiner has identified insufficient evidence to support a conclusion of prima facie obviousness. *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (citing *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)). "When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the

field, the combination must do more than yield a predictable result." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007). That said, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Kahn*, 441 F.3d at 988.

As a general rule, a reference which "teaches away" from the subject matter of a claim does not support a prima facie case that the subject matter would have been obvious. A reference teaches away from the subject matter of a claim only if "a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

ANALYSIS

Steen discloses a catheter comprising a catheter body. (FF 1). The catheter body comprises at least one polymeric tubular member (FF 1) and a braided tubular structure (FF 2). The braided tubular structure comprises a plurality of signal transmitting elements woven radially in and out to form said braided tubular structure. (FF 3 and 4). The braided tubular structure is embedded in a wall of the polymeric tubular member. (*See* FF 3). As the Examiner correctly finds (*see* Ans. 3), Steen does not disclose that any of the signal transmitting elements are component tubular elements having longitudinal lumens.

Steen and Mische each disclose or suggest catheter assemblies which include signal transmitting elements extending the length of the catheters to

in-body sensors located at the distal ends of the catheters. (*See* FF 1, 3 and 5). Mische also discloses providing micro-tubes arranged in parallel with electrical or optical signal transmission elements. (FF 8). Mische discloses that the micro-tubes provide operative connection for transmission of pressure control to in-body sensors and for sensing in-body pressure conditions. (*Id.*) In other words, Mische's micro-tubes are signal transmitting elements--they conduct signals characterized by modulation of a fluid pressure rather than by modulation of an electrical voltage or a light intensity. In this sense, Mische reveals micro-tubes to be interchangeable with electrical or optical transmitters for transmitting certain types of information relating to sensing in-body conditions encountered at the distal end of a catheter.

The Appellants do not appear to contend that it would have been beyond the level of ordinary skill in the art to embed micro-tubes rather than electrical or optical conductors in the wall of a polymeric tubular member. Neither do the Appellants assert that embedding micro-tubes rather than electrical or optical conductors in the wall of a polymeric tubular member would have produced results which one of ordinary skill in the art could not have predicted. The Examiner correctly concludes (*see* Ans. 3 and 7) that the simple substitution of micro-tubes as taught by Mische for two or more signal transmitting elements in the braid disclosed by Steen would have been obvious to one of ordinary skill in the art.

Mische does not teach away from such a combination as argued by the Appellants. (*See* App. Br. 13-14). Mische discloses embedding micro-tubes in parallel with electrical or optical signal transmitting elements in a micro-cable interconnect adapted for insertion within the lumen of a catheter (FF 6-

8) and does not mention embedding micro-tubes in the wall of a polymeric catheter tube. On the other hand, Mische does not disparage embedding micro-tubes in the wall of a polymeric catheter tube. Neither does Mische suggest any reason why micro-tubes embedded in the wall of a catheter tube would not conduct pressure signals as well as micro-tubes embedded in a micro-cable interconnect inserted in the lumen of the catheter would conduct such signals. Mische's silence concerning embedding micro-tubes in the wall of a polymeric catheter tube, even when considered in the context of Mische's disclosure as a whole, is not a teaching away from substituting micro-tubes for two or more signal transmitting elements in the braid disclosed by Steen. *Cf. DyStar Textilfarben GmbH v. C.H. Patrick Co.*, 464 F.3d 1356, 1364 (Fed. Cir. 2006)("We will not read into a reference a teaching away from a process where no such language exists.").

Samson discloses a catheter including an inner tube assembly and an outer tube assembly. (FF 9-10). Both the inner tube assembly and the outer tube assembly include braid confined annularly between interior and exterior coverings comprising a catheter body. (FF 10). Unlike Steen's braid, Samson's braid does not include signal transmitting elements. (FF 11). Samson fails to teach any element for which a simple substitution of Mische's micro-tubes could have been made.

The reasoning articulated by the Examiner for modifying Steen's braid to include component tubular members presupposes the substitution of micro-tubes for the wires of Samson's braid in the manner similar to that in which the Examiner proposes substituting micro-tubes for Steen's signal transmission elements. (*See* Ans. 4 and 8-10). The reasoning lacks rational underpinning in the teachings of Samson and Mische. The mere fact that the

wires which make up Samson's braid might conduct electricity does not imply, as the Examiner appears to conclude (*see* Ans. 9), that one of ordinary skill in the art would have viewed Samson's wires as signal transmission elements or micro-tubes as interchangeable with the wires. Since Samson does not disclose signal transmission elements incorporated into the braid (*see* FF 11), the Examiner errs in concluding (*see* Ans. 4-5) that one of ordinary skill in the art would have recognized the substitution or addition of micro-tubes into Samson's braid as providing "*another* means to transmit something from one end of the catheter to another which would expand the usefulness of the product . . ." (*id.* (emphasis added)).

CONCLUSIONS

The Appellants have not shown that the Examiner failed to articulate reasoning with some rational underpinning sufficient to support the conclusion that Steen and Mische would have suggested a catheter including a braided tubular structure comprising a plurality of tubular members woven radially in and out to form said braided tubular structure. Therefore, the Appellants have not shown that the Examiner erred in rejecting claims 1, 2, 6 and 7 under § 103(a) as being unpatentable over Steen and Mische.

The Appellants have shown that the Examiner failed to articulate reasoning with some rational underpinning sufficient to support the conclusion that Samson and Mische would have suggested a catheter including a braided tubular structure comprising a plurality of tubular members woven radially in and out to form said braided tubular structure. Therefore, the Appellants have shown that the Examiner erred in rejecting claims 1-9 under § 103(a) as being unpatentable over Samson and Mische.

DECISION

The Examiner's rejection of claims 1, 2, 6 and 7 is AFFIRMED.

The Examiner's rejection of claims 3-5, 8 and 9 is REVERSED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED-IN-PART

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